

Blue Cross and Blue Shield of Vermont and The Vermont Health Plan
Q3 2018 Large Group Rating Program Filing
Actuarial Memorandum

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1. Purpose

Blue Cross and Blue Shield of Vermont (BCBSVT) and The Vermont Health Plan (TVHP) perform large group rating on a case-by-case basis. Rating is accomplished through a formulaic approach that blends recent group experience with a manual rate according to a credibility formula. Formula results may be adjusted for underwriting judgment and/or management decisions. This filing establishes the formula, manual rate, and accompanying factors that will be used for renewals beginning upon approval of this filing, most notably January 2019 renewals.

Once approved, this filing will be used for large group and grandfathered small group renewals (we will refer to them collectively as large groups for the remainder of the filing) prepared for business under the jurisdiction of the Green Mountain Care Board (GMCB) until superseded by a subsequent filing. This filing will apply beginning with rates communicated five business days after the date of its approval, and continuing until five business days after the date of approval of the next BCBSVT and TVHP Large Group Rating Program Filings. The term “communicated,” for this purpose, means a written proposal delivered to a large group account.

2. Overview and Rate Impact

2.1. Overview

This filing includes a description of the renewal formula and the development of each of the factors used in it. This formula is used for insured products, including Cost Plus. BCBSVT projects that 14,216 members (7,374 subscribers) in 64 groups will be impacted by this filing. These totals include members of both BCBSVT and TVHP, and we will refer to the combined population as BCBSVT throughout this memorandum.

We will describe in detail the formula used in the renewals. The formula has been modified from the currently approved version (BCVT-130935599 and BCVT-130935776). The changes, described in detail below, pertain to the manual rate and the development of pooling and ISL factors.

We will then detail the factors applicable to all insured large groups. The factors in the build-up of the projected claims cost include the large claims factors, trend factors, benefit relativities, and the manual rate. In addition to the projected claims cost, we will explain the calculation of administrative charges, the net cost of reinsurance, contribution to reserve, and state and federal assessments, all of which are included in the rate development.

Finally, we will discuss factors applicable only to specific products. Cost Plus customers purchase Individual and Aggregate Stop Loss (ISL and ASL) from BCBSVT. We also offer an Experience Refund Eligible product for which risk charges and settlement administration charges apply. Cost Plus products are not available through TVHP.

2.2. Impact of Formula and Factor Changes

To compute the impact of changes to the rating formula and the various factors in this filing on large group premium rates, we produce two renewals for each of the 64 large groups we expect to enroll in 2019 (excluding one group without a complete 12 months experience period with

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two months of runout). The first renewal uses the approved factors currently in force (BCVT-130935599 and BCVT-130935776) with an effective date of January 1, 2018. The rates in these renewals are used as a baseline for the comparison with the rates produced by the new factors. The second renewal uses the same experience period as the first but has an effective date of January 1, 2019 and uses the factors and formulas detailed in this filing. The new trend factors are applied for 12 months to represent an additional year of trend with the new trend assumption.

The result of comparing the renewals across all 64 large groups is an average 11.2 percent rate increase. Reasons for the rate increase can be attributed to three main causes: health care cost trend, changes in the rating formula and filed factors, and changes mandated due to the Affordable Care Act (ACA).

The largest component of the increase is the additional year of trend applied to the experience and manual claims, which increases the required premium by 5.6 percent. An increase in medical and pharmacy trend over the previously approved assumptions is responsible for a 0.4 percent premium increase. A change in manual rate methodology increases the required premium by 5.1 percent. The primary driver of the change in manual rate was the change made to base the manual rate on the collective experience of the groups impacted by this filing. Other manual rate, experience rate, and rebate changes are responsible for a 0.9 percent premium increase, resulting in a cumulative 12.1 percent to premium due to projected paid claims. An increase in administrative charges has increased required premium by 1.2 percent. The average rate increase from all changes to the formula and factors is 13.7 percent.

Changes in federal programs under the ACA work to decrease the average rate increase by 2.5 percent. The federal insurer fee is assessed to insured groups and goes to pay for some provisions of the ACA. H.R. 195 temporarily suspends this fee for 2019. We estimate the fee will be 2.2 percent of premium in 2020.

Changes due to the Tax Cuts and Jobs Act reduce the average rate increase by 1.2 percent. This change is reflected in rates through a decrease in contributions to reserve from 2.0 percent to 1.5 percent, and an elimination of the tax gross-up for the federal insurer fee¹, which had the effect of decreasing the premium impact of the federal insurer fee from 2.6 percent to 2.1 percent. For renewals being produced under the currently approved filings (BCVT-130935599 and BCVT-130935776), BCBSVT and TVHP have already lowered the insurer fee to reflect the updated amount. The rate reduction due these changes are reflected in the contribution to reserve and federal programs lines in the table below. The impact of these changes are included in their respective sections above.

The overall 11.2 percent rate increase translates to a \$55.68 PMPM increase. The PMPM increase can be broken down as follows:

¹ The federal insurer fee is not tax deductible, and therefore must be grossed up for federal income taxes.

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Component	2018 PMPM	2019 PMPM	PMPM Change	Impact on Premium Increase
Projected Paid Claims(a)	\$419.61	\$479.75	\$60.13	12.1%
Administrative Charges	\$35.88	\$41.83	\$5.95	1.2%
Contribution to Reserve	\$9.67	\$8.06	-\$1.61	-0.3%
Federal Programs	\$12.65	\$0.00	-\$12.65	-2.5%
Additional Items(b)	\$19.43	\$23.28	\$3.85	0.8%
Total	\$497.23	\$552.91	\$55.68	11.2%

(a) Projected paid claims increase of 12.1% includes manual claims (20.2 percent increase), experience claims (8.1 percent increase), and projected rebates (1.3 percent increase), as outlined in the table below.

(b) Additional Items includes net cost of reinsurance, Cost Plus stop loss, broker commissions, state mandates and assessments, fees paid to outside vendors, the GMCB billback, and the Refund-Eligible margin & risk charge.

Paid Claims Components ²	2018 PMPM	2019 PMPM	PMPM Change	Percent Change	Premium Impact
Manual Claims	\$211.85				
12 Months of Q3 2017 Paid Trend		\$226.10	\$14.25	6.7%	2.9%
Use Q3 2018 Trend		\$227.29	\$1.19	0.6%	0.2%
Change Method		\$254.55	\$27.26	12.9%	5.5%
				20.2%	8.6%
Experience Claims	\$217.34				
12 Months of Q3 2017 Paid Trend		\$231.15	\$13.81	6.4%	2.8%
Use Q3 2018 Trend		\$232.05	\$0.90	0.4%	0.2%
Update Factors		\$234.90	\$2.85	1.3%	0.6%
				8.1%	3.5%
Projected Rebates	-\$9.58	-\$9.70	-\$0.12	1.3%	0.0%
Projected Paid Claims	\$419.61	\$479.75	\$60.13	14.3%	12.1%

3. Formula Description

Rates for active and Medicare Primary subscribers are developed separately based on their own experience. Both the formula and factors described in this filing are the same for both populations except where noted. Medicare Primary rate tiers are not offered on TVHP.

² The experience and manual claims reflect their credibility and residual weighted values.

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Benefit-Adjusted Projected Single Claims Rate

A sample calculation of this quantity can be found as Exhibit 1A. Page 1 of the exhibit applies to active members and page 2 applies to Medicare Primary members. For each case, we start the rating with a twelve month experience period with two months of runout³. We determine a pooling point based on the size of the case at the end of the runout period and split the experience period claims (line A) into amounts above (line B) and below (referred to as capped claims, line C) the pooling point.

We apply completion factors (line D) developed from the monthly financial reporting process to capped claims to produce completed capped claims (line E). We use the formula and factors described in Milliman's *2017 Health Cost Guidelines - Reinsurance* to calculate expected claims above the pooling limit (line F). The expected claims above the pooling limit are added to the completed capped claims to produce large-claim-adjusted experience period claims. Medicare Primary members generally do not have claims near the group's pooling point, so their claims are not pooled. We then multiply the large-claim-adjusted experience claims by an adjustment factor (line G) to reflect structural changes in the benefit plan from the experience period to the rating period. This is to adjust for such things as mandated benefit changes, contractual provision changes, etc., that, in the judgment of the underwriter, are necessary to make the experience appropriate for the estimation of the expected claims in the rating period. We divide the result (line H) by the number of member months during the experience period (line I) to produce adjusted experience period claims per member per month (line J).

The adjusted experience period claims per member per month (PMPM) is then divided by a seasonally-adjusted benefit relativity value to neutralize any effect of seasonality and benefits on the paid claims. To determine this factor, we first determine a benefit relativity factor for each benefit plan (using the factors described in section 4.3) and contract tier type (single, 2-person, family, etc.). Based on the seasonal patterns observed as part of the reserving process for each calendar month, we determine seasonal factors for CDHPs and for non-CDHPs and normalize them so that they total to 12. We combine these factors to calculate seasonal benefit relativity factors for each combination of benefit plan, contract tier type, and month. We apply these factors to the number of contracts for each benefit plan, contract tier type, and month in the experience period. We total the results and divide the resultant sum by the number of member months in the experience period. The seasonal factors are applied regardless of the length of experience period, but if there is a 12 month experience period and there are no changes in benefits or enrollment, the normalization of the seasonality factors would cause the seasonal adjustment to be 1.000. This produces the average experience period seasonally adjusted benefit relativity factor (line K).

We adjust for any change in the demographics of the group between the experience period and the rating period by calculating the average demographic factor for each period and applying the ratio of projection to experience (line L). The adjusted experience period claims PMPM (line J) is multiplied by the demographic normalization factor and divided by the average experience period seasonally adjusted benefit relativity factor (line K) to produce the benefit-adjusted experience period single claims rate (line M), which is the expected cost for a single

³ For first year renewals, where twelve months of experience is not available, we generally use claims incurred in nine months with no runout.

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contract in the experience, neutral of benefit and seasonality. We then multiply this by a trend factor (line N, as calculated in section 4.2) to project the claims from the experience period to the rating period. We also multiply by a factor (line O) to account for differences in contracted pharmacy discounts between the experience period and the projection period.

The resulting projected single contract rate (line P) is then blended (using the credibility formula described below) with the adjusted manual rate (line Q, as described in section 4.4).

The credibility factor (line R) is calculated as follows:

$$Credibility = \sqrt{\frac{Member\ Months}{Upper\ Bound}}$$

The upper bound is determined based on pooling point as follows:

Pooling Point	Member Months
Medicare Primary	8,325
\$70,000	14,002
\$90,000	16,127
\$110,000	17,923

If member months are greater than the upper bound, the credibility factor will be 1.

To blend the projected single contract rate with the adjusted manual rate, we use the following equation:

$$Benefit-Adjusted\ Projected\ Single\ Claims\ Rate = Projected\ Single\ Contract\ Rate \times (Credibility) + Adjusted\ Manual\ Rate \times (1 - Credibility)$$

Required premium by Plan, Tier Type

A sample calculation of premium can be found as Exhibit 1B. For each plan and contract tier type anticipated in the rating period, we calculate projected claims (line B1) as the product of the benefit-adjusted projected single claims rate (S) and the benefit relativity factor (as described in section 4.3) for the plan and contract tier (line A).

The members per contract tier during the last month of the runout period is the basis for the projected members per tier in the rating period. The underwriter will adjust this if, in their opinion, the result is not representative of the expected values in the rating period.⁴

The calculation for the total required premium by (plan, tier) is as follows:

⁴ E.g., the number of contracts in a particular tier may be small (or even 0). In such instances, the underwriter should use appropriate values based on total block of business or other appropriate source.

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{ Projected Claims by Plan and Tier (line B1)	+
Expected Net Cost of Reinsurance (line B2, as described in section 4.6)	-
Projected Pharmacy Rebates (line B3, as described in section 4.7)	+
Administrative Charges (line D, as described in section 4.5)	+
State Mandates and Federal Assessments (line C1 to C4, as described in sections 4.9 and 4.11)	/
{ 1 - Contribution to Reserve (line F, as described in section 4.8) - Broker Commissions (line E) - Federal Insurer Fee (line G, as described in section 4.10)}	=
Required Premium by Plan and Tier (line H)	

Underwriting Judgment Adjustments

If, in the underwriter’s professional judgment, the specific properties of the case being rated are such that the standard formula would not produce appropriate rates for the rating period, the underwriter will make such modifications as needed to produce appropriate rates. The underwriter will document in the case file the reason(s) for the adjustment(s) and the method of determining the appropriate adjustment(s).

Management Discretionary Adjustments

For marketing or other reasons, management may decide to modify the rates on a specific case or block of cases. The underwriter will document in the case file the adjustment(s) made, along with a description of the nature of the adjustment(s).

4. Factors applicable to all Large Groups

4.1. Large Claims Factors

BCBSVT and TVHP will use the formula and factors in Milliman’s 2017 *Health Cost Guidelines - Reinsurance* to calculate expected claims above the pooling limit. The contents of the *Guidelines* are proprietary and confidential. This filing will provide a general description of the formula but will not include any of the factors.

Claim costs above a particular pooling point are developed separately for children and adults on a PMPM basis. The basis for each rate is a starting claim cost that varies with the pooling point and the out-of-pocket limit for the benefit. The starting claim costs are based on national data and factors are applied to adjust to our Vermont service area and the details of our contracts with local providers. An adjustment for demographics, using factors normalized to enrollment for the large groups subject to this filing, is applied, as is a trend factor to adjust the starting claim costs for the experience period of the renewal. The starting claim costs are also adjusted for the network of the benefit to account for claims from out-of-network providers, if appropriate for the benefit.

The adjusted adult and child claims rates by benefit are multiplied by the number of adult and child member months in the experience for that benefit to develop the total expected claims above the pooling level.

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Exhibit 2A contains the expected claims above pooling for each of the 64 large groups expected to enroll in 2019 (excluding one group that is composed entirely of Medicare Primary members and has no expected claims above pooling). It compares the results of the new formula in this filing to the expected claims above pooling developed with the large claims factors from the Q3 2017 filing (BCVT-130935599 and BCVT-130935776).

4.2. Trend Factors

We are modifying our base of members used in the trend development to exclude large ASO groups (5,000+ members) and include small groups enrolled in Qualified Health Plans with BCBSVT. The breadth of plan offerings and group size of the small group market is more analogous to the large group market than the benefits and experience of large ASO groups. Including small groups creates greater consistency and credibility within the trend factor development.

4.2.1. Medical Trend Development

The source of the data is BCBSVT's data warehouse, except where noted below. To ensure accuracy of claims information, the data used has been reconciled against internal reserving, enrollment and other financial reports. The data includes claims from BCBSVT Cost Plus groups, BCBSVT ASO Groups, BCBSVT insured large groups, BCBSVT insured small groups, TVHP insured small groups, and TVHP insured large groups. CDHP and Non-CDHP claims were combined. Large ASO groups and ASO groups with special pricing arrangements were excluded. Claims from Medicare Primary members were excluded. Medicare Primary trend is discussed in section 4.3.

BCBSVT and TVHP cover substantially similar populations under similar benefit packages. Combining these homogeneous populations creates greater consistency and credibility within the trend factor development.

Using the historical contracted reimbursement schedules, we calculated network factors that represent the different contracts and modify the claims to reflect a single contract. By making these adjustments we can observe the historical cost increases using all large group claims information.

Medical trend is composed of three pieces: cost, utilization, and intensity. In our analysis, we combined utilization and intensity within the utilization metric and analyzed the unit cost separately. Historical experience was normalized for contract changes and then analyzed to derive a utilization trend in the absence of unit cost changes. Future unit cost trends were developed on a discrete basis using the most recent round of contract negotiations as a starting point. The overall trend is the product of these two components.

Unit Cost

Unit cost trends were largely derived from observations of recent contracting and provider budgetary changes. During the year ended July 2017, roughly 52 percent of total claims dollars were provided by Vermont facilities and providers impacted by the hospital budget review process of the Green Mountain Care Board (GMCB). We started with the assumption that the GMCB would approve hospital budgets for October 1, 2018 and October 1, 2019 that support

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identical commercial increases as those approved for October 1, 2017, with the exception of hospitals that publicly announced their intended commercial increase.

Similarly, we assumed for other providers within the BCBSVT service area that overall 2018 and 2019 budget increases would be identical to those implemented during calendar 2017. The provider contracting and actuarial departments worked together to assess the impact these increases would have on contracts for BCBSVT Managed Care, BCBSVT Non-Managed Care, and TVHP Managed Care contracts.

Finally, unit cost increases for providers outside the BCBSVT service area were derived from the Fall 2017 Blue Trend Survey, which is a proprietary and confidential dissemination of the BlueCross BlueShield Association.

For marketing reasons, provider contracting has been negotiating different unit cost increases for each of the three contracts. To reflect this, we calculated three different cost trends, one for each contract.

Contract normalized claims were trended forward using expected increases. Unit cost trend was calculated by dividing claims year-ending December 2019 by claims year-ending June 2018 and converting to an annual factor.

The results of the analysis are summarized in the below chart:

	Annual Unit Cost Trend Assumption		
	BCBSVT Managed Care	BCBSVT Non-Managed Care	TVHP Managed Care
Vermont facilities and providers impacted by GMCB's Hospital Budget Review	2.3%	2.3%	2.3%
Other facilities and providers	3.4%	3.4%	3.4%
Total	2.8%	2.8%	2.8%

Utilization & Intensity

Historical utilization trend patterns were examined by first normalizing claims for unit cost increases. Contract changes for the entirety of the experience period were measured explicitly for each facility within our service area as well as the three largest physician groups.

Increases were measured for fee schedules and other Chargemasters by applying each schedule to a market basket of services. The market basket was defined by using Current Procedural Terminology (CPT) codes & CPT modifier combinations that were present in each of the effective periods the schedules covered. Using the same experience period data used throughout the trend analysis, total allowed costs for the selected CPT & CPT modifier combinations were compared under each schedule to estimate the percentage increase. For contracts under Diagnosis Related Group (DRG) arrangements, we compared the charge for the

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1.000 DRG service for each period. Finally, for services under a discount of charge arrangement, we used the contracted chargemaster increase provided by our provider contracting department.

This accounted for 80 percent of allowed claims dollars during the experience period. Costs for other claims were primarily for out-of-area services. Contracting changes for these claims were derived from the Fall 2017 Blue Trend Survey, which is a proprietary and confidential dissemination of the BlueCross BlueShield Association.

Claims were normalized to the July 2017 contract at each unique provider by applying a factor equal to the product of the impact of each contracting change from the experience month through July 2017. The derived trend for other claims was assumed to be continuous. Please see Exhibit 3A for an illustration of this approach.

Exhibit 3B, Page 1 shows the resulting array of allowed PMPM claims costs, before and after normalization for contract changes. We performed a 24-month regression on monthly PMPM costs to match the length of the period used in the calculation of the cost trend (described above). We also calculated a year-over-year rolling PMPM utilization trend of 7.1 percent for the year ended July 2017.

Given our standard methodology produced atypically high utilization trends, we removed all claims from members who exceeded \$500,000 in paid medical claims in 12 month periods preceding July 31, 2017. As the utilization component includes intensity, an increase in high cost claimants can impact the year-over-over and regression calculations. Exhibit 3B, Page 2 shows the resulting array of allowed PMPM claims costs after this adjustment. We performed time series analyses on the adjusted monthly PMPM costs. Exhibit 3C shows the results of the time series analysis. Certain time series methods, such as those assuming no trend or those for which there is not sufficient historical data⁵, are not included, as these are inappropriate for use in trend development and/or for the data available.

We select a utilization trend of 3.0 percent. This is lower than the trend calculated by our standard methodology, but is in the range of trends produced by the time series analysis. Primary drivers of utilization trend include the stabilization of inpatient utilization. Year-over-year inpatient days per 1000 members increased 0.7%. Previously, inpatient days per 1000 members decreased as services moved away from an inpatient setting, which helped offset utilization and intensity trend in other areas. We believe inpatient utilization will remain stable in the future and no longer offset other components of utilization trend. Inpatient cost per admit normalized for contract changes increased 2.6%. This reflects an increasing cost in the mix of services, which is another major driver of total utilization trend. Components of inpatient services, such as drugs and injectables administered in a facility, continue to be a main component of the increasing cost of the inpatient mix of services. We anticipate the cost and utilization of drugs will continue to drive high inpatient intensity trends. Lastly, professional visits per 1000 increased 3.1%. We expect professional utilization will increase as care continues to be shifted to more appropriate settings. For example, we noted an 8.1 percent increase in professional mental health services, which is likely replacing some inpatient and ER visits. The components of increasing utilization trend have been corroborated by our

⁵ The seasonal additive, seasonal multiplicative, single moving average, and single exponential smoothing methods are not used since they assume no trend. The double moving average method is not used due to insufficient historical data.

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Chief Medical Officer. Increasing utilization and intensity is also corroborated by hospital actual-to-budget narratives. The impact of low cost trend changes are largely offset by increasing utilization and intensity, which is acknowledged as a main driver of hospital budget overages.

Induced Utilization

We investigated the impact of benefit changes throughout the experience period on utilization. Large groups have engaged in a benefit buy-down strategy over the last several years as a means of limiting rate increases. This may manifest itself in a lower actuarial value over time and a dampening effect on trend due to decreases in induced utilization. A development of the impact of induced utilization is shown in the table below:

Year Ended	Paid-to-Allowed Ratio	Induced Utilization	Percent Change
July 2014	74.6%	0.9597	
July 2015	74.4%	0.9586	-0.1%
July 2016	74.0%	0.9559	-0.3%
July 2017	74.0%	0.9557	0.0%

The year ended July 2017 percent change is converted to a factor and applied to utilization trend.

Utilization and Intensity	3.0%
Induced Utilization	1.000
Utilization Trend	3.0%

The concept of induced utilization is discussed further in section 4.3. Exhibit 3D shows the development of the induced utilization factor.

Total Medical Trend

The total medical trend factors are the product of the utilization trend and the unit cost trend factors.

	BCBSVT Managed Care	BCBSVT Non-Managed Care	TVHP Managed Care
Cost Trend	2.8%	2.8%	2.8%
Utilization Trend	3.0%	3.0%	3.0%
Total Medical Trend	5.9%	5.9%	5.9%

To calculate the overall medical total trend to be applied in the renewal formula, we trended the manual rate (see section 4.4) experience medical claims based on the network to calendar year 2019. We then divided the projected claims cost by the experience claims cost to calculate the overall medical trend.

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	BCBSVT Managed Care	BCBSVT Non- Managed Care	TVHP Managed Care	Total
Experience Allowed Claims (Medical Only)	\$9,183,505	\$41,583,366	\$17,816,597	\$68,583,468
Trend Factors for 27 months	1.137186	1.137427	1.137186	
Trended Claims	\$10,443,350	\$47,298,054	\$20,260,778	\$78,002,182
Annual Trend				5.9%

4.2.2. Pharmacy Trend Development

The source of the data is BCBSVT's data warehouse, except where noted below. To ensure accuracy of claims information, the data used has been reconciled against internal reserving, enrollment and other financial reports. The data includes claims from BCBSVT Cost Plus groups, BCBSVT ASO groups, BCBSVT insured large groups, BCBSVT insured small groups, TVHP insured small groups, and TVHP insured large groups. Combining these homogeneous populations creates greater consistency and credibility within the trend factor development. Claims from Medicare Primary members were excluded. Compound drugs claims were excluded. The data from ASO groups whose pharmacy benefits are not administered through the BCBSVT contract with ESI were excluded. Large ASO groups who offer benefits atypical to the large group marketplace were excluded. We used claims incurred from October 1, 2015 to September 30, 2017, paid through October 31, 2017. Completion factors were applied to estimate the ultimate incurred claims for each period shown in the exhibits.

ESI has been the pharmacy benefits manager for BCBSVT and TVHP since July 2009. The initial ESI contract was for a period of 3 years; new contracts became effective July 2012, July 2015, and January 2018. Similar to previous Large Group Rating Program Filings, we base our cost trend calculation on Average Wholesale Price (AWP) and apply a factor to the rating formula to account for the contracting changes.

With the emergence of new and expensive specialty drugs, as well as the ongoing shift to generics as more brand drugs come off patent, we analyzed the components of trend (cost and utilization) separately for brands, generics, and specialty drugs. We projected the generic dispensing rate (GDR) based on the brand drugs that are scheduled to lose patent in the projection period. Specialty drugs are very high cost drugs with low utilization. Because of their relative infrequency, it is more appropriate to look at the overall PMPM trends for these drugs rather than separate cost and utilization components. The overall pharmacy trend is calculated by combining the separate projections.

Non-Specialty Drugs

Exhibit 3E provides the monthly and the 12-month rolling data, along with the corresponding year-over-year and exponential regression trends, for non-specialty drugs. These are shown separately for the generic cost, brand cost, and overall non-specialty utilization categories. The number of days supply, rather than the number of scripts, was used to normalize for

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changes in the days supply per script (e.g. increased use of 90-day fills). Because there are several popular brand drugs that have become generic during the experience period, or will become generic during the projection period, we combined the data for generic and brand drugs for the purpose of analyzing utilization patterns (the separate GDR projection is applied to the total projected utilization to arrive at brand and generic components). The regressions use 24 data points on the monthly data, in order to best capture an adequate amount of the most recent history of drug costs. We select annual trends of 3.7 percent for generic cost, 9.8 percent for brand cost, and calculated -0.8 percent for total non-specialty utilization. While this population experienced a decrease in their non-specialty utilization in recent months, we do not expect a negative utilization trend to continue. We therefore select a 0.0 percent non-specialty utilization trend.

Based on our current distribution of days supply and a list of brands expected to move to generic in the period during which these trend rates will be in effect, as provided by ESI, we estimate that GDR will reach 90.6 percent in the projected period. It is important to note that care must be taken in projecting the GDR to avoid the simplistic assumption that generic shift will continue at historical levels. Generic conversion is a very discrete function - while specific dates for generic launches may be impacted by ongoing litigation, the list of brand drugs losing their patent protection is well-recognized in the industry. Furthermore, generic substitution protocols have increased generic substitution rates to well over 99 percent where such switches are clinically viable. For the above reasons, it would be actuarially inappropriate to base a future GDR assumption on a linear projection of past increases, which is why we have chosen to take a far more detailed, and more discrete, approach. Exhibit 3F shows the calculation of the 90.6 percent GDR in the projection period. Utilization for brand drugs losing or expected to lose their patent protection from November 2015 through the projection period is summarized by month. Because Average Wholesale Price (AWP) and effective discounts do not change significantly for most new generic drugs until the six-month exclusivity period has closed (that is, when the generic becomes "multi-source"), monthly utilization for the year ended October 2017 was repeated through six months following each generic launch date (i.e. we assume the same days of supply in November 2017 as we had in November 2016, and so on). After that time, all utilization is expected to shift to generic. We assumed drugs with no generic exclusivity period will switch to generic immediately after the patent expires.

Exhibit 3G summarizes the trends for non-specialty drugs and calculates our total non-specialty allowed drug trend as 2.4 percent.

Specialty Drugs

The introduction of certain new specialty drugs requires an adjustment to the specialty drug trend calculation. High-cost or high-utilization drugs have entered the market recently, such as Orkambi, a treatment for cystic fibrosis with an annual cost of almost \$250,000, and PCSK9 inhibitors like Repatha, used to treat high cholesterol in patients with the genetic disease familial hypercholesterolemia (FH) who have failed one statin and patients who have suffered a heart attack and failed two different statins. To accurately capture the effect of these new drugs on specialty trend, we removed their claims from the experience to calculate a trend rate to apply to these non-excluded claims. We trended those claims forward at the calculated rate for 27 months, then added back in our projections of claims for the new treatments (Orkambi, Ocrevus, and PCSK9 inhibitors). We used the total restated projected claims to calculate a restated specialty trend. Any cost estimates for excluded drugs developed using

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demographic estimates are calculated using the same membership and/or claims underlying pharmacy trend development.

In previous filings, we excluded hepatitis C claims and added them in discretely based on projected claimants. On January 1, 2018, BCBSVT expanded its prior approval criteria for hepatitis C drugs. Given the change in criteria, the methodology used in previous filings is no longer appropriate for projecting the number of claimants. Due to the difficulty in estimating claimants with the expanded criteria, hepatitis C claims were not excluded from the standard specialty regression in this filing. Given that hepatitis C drug claims are in the entire experience period used to develop the specialty trend, their inclusion does not unduly impact specialty trend.

Exhibit 3H, Page 1 shows the calculation of specialty trend both for all specialty drugs and for specialty drugs excluding the new treatments described above. For our regressions, we chose 24 points of 12-month rolling data to capture the most recent history of drug costs. A rolling 12-months regression is more appropriate for specialty drugs because of the low-frequency, high-cost nature of these drugs. The total specialty trend is 20.6 percent. Removing the large cost increases associated with the new treatments results in a 19.8 percent trend for the remaining specialty drugs.

PCSK9 inhibitors such as Repatha are used to treat high cholesterol. BCBSVT's current policy is to approve PCSK9 inhibitors for the treatment of familial hypercholesterolemia (FH), a genetic disease characterized by very high levels of cholesterol in the blood, after failure of one high-dose statin for 60 days. Current incidence studies suggest that 200 persons per 100,000 lives are diagnosed with FH. Another indication for these drugs is for patients who have had a heart attack and then failed two different high-dose statins for 60 days. Based on current membership, we project 18 members will use a PCSK9 inhibitor in 2019. With an annual cost of about \$13,000, the projected total is \$230,000.

Orkambi is a drug used in the treatment of cystic fibrosis. In particular, it is used to treat a specific mutation of the disease that is found in roughly 50 percent of cystic fibrosis patients. Orkambi is prescribed to patients age 12 and older. On previous filings, we assumed that 50 percent of our members diagnosed with cystic fibrosis who are at least age 12 will take Orkambi. Only one member in the experience period had claims for Orkambi. Given the length of time the drug has been available, we expect we will see no change in utilization and add in the projected total of \$249,000, which is the annual cost of one claimant.

Ocrevus is a drug used in the treatment of multiple sclerosis (MS). We estimate 15 percent of our members currently taking medication for MS would move to Ocrevus. We therefore excluded 15 percent of the average annual cost of MS medications from specialty claims to reflect this shift, and added in the estimated cost of Ocrevus. No adjustment was made to the experience used to develop the non-exclusion specialty trend, since only a proportion of claims are removed.

To calculate the restated specialty trend, we started with the pharmacy claims from the year ended September 30, 2017 experience period and removed the claims for PCSK9 inhibitors, Orkambi, and Ocrevus. We then trended the remaining claims at a 19.8 percent rate for 27 months and added the incremental cost of PCSK9 inhibitors, Orkambi, and Ocrevus for a total

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restated projected claims. Using this method, the restated specialty drug trend is 19.2 percent. See Exhibit 3H, Page 2 for details.

Total Pharmacy Trend

Using the PMPM claims as weights between Non-Specialty and Specialty claims for the 12 months ended September 2017, we applied the annual trends for 27 months and calculated the following:

Category	PMPM	Annual Trend
Generic	\$20.52	4.7%
Brand	\$35.63	1.2%
Specialty	\$54.43	19.2%
Total	\$110.58	9.7%

Please note that contract changes are applied separately from trend in order to accurately capture the timing for each renewal.

Contract Adjustment Factors

For drug claims in the year ended September 30, 2017, we took the AWP of the claims and applied the contracted discounts and dispensing fees if applicable for each potential renewal experience period and rating period to calculate adjusted allowed charges. The contract adjustment factor for each experience and rating period combination is the ratio of the adjusted allowed charges.

Applying the discount adjustment from the experience used to develop trend to a 12 month rating period, we calculated a 7.1 percent effective annual trend. Due to the contracting cycle, we do not anticipate the impact of contracting changes to be of this magnitude for the remainder of the contract period with ESI.

Exhibit 3I Page 1 contains the contract adjustment factors that will be applied to the drug claims in a group's renewal. These factors assume that both the experience period and rating period are 12 months. For cases where this is not true, or for periods not provided in the exhibit, we will calculate an appropriate factor using analogous methodology.

4.2.3. Overall Total Trend

Using the year ended September 2017 for the groups included in the manual rate (see section 4.4), the overall allowed trend is

Category	Allowed PMPM	Allowed Trend
Medical	\$ 413.40	5.9%
Pharmacy	\$ 83.67	9.7%
Total	\$ 497.07	6.5% ⁶

⁶ The allowed trend with the pharmacy contract adjustment is 6.1%.

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While we have included no implicit or explicit margin in our trend selections, we recognize that an environmental change may create a significant shift in either direction. As we have suggested in past years, we would submit an interim trend filing should information become available that meaningfully differs from the underpinnings of the trend analysis in this filing.

Leveraged Trends

The above trends are based on allowed charges and do not account for the leveraging effect of deductibles and copays. We utilized our benefit relativity models (see section 4.3 for a description of the methodology) to calculate the impact of leveraging on each benefit. To do so, we calculated the paid PMPM with and without the allowed trend (as described above). The ratio between the two paid PMPMs is the paid trend for that benefit, and the ratio between the paid trend factor and the allowed trend factor is the leverage factor. See Exhibits 3J and 3K for examples of leverage factors.

Applying the leverage factors for benefits present in the year ended September 2017 for the groups included in the manual rate, we calculate the following paid trends:

Category	Paid PMPM	Paid Trend
Medical	\$ 325.96	7.0%
Pharmacy	\$ 72.78	10.6%
Total	\$ 398.74	7.7% ⁷

Medicare Secondary Trends

Medicare Secondary plans cover two categories of services: Medicare-covered services which are subject to member cost share (deductible/coinsurance) and services which are not covered by Medicare. Services subject to Medicare cost sharing were not adjusted for network, as the allowed charges are determined by Medicare, whereas the services not covered by Medicare were adjusted using the contract factors described above to bring all charges to a single network.

For Medicare claims, cost trends were developed for the different types of service using trends from CMS⁸. Increases for 2019 were assumed to be the same as the 2018 increases. We assumed a 0.0 percent utilization trend for Medicare claims.

Category	Allowed Trend
Inpatient	2.0%
Outpatient	2.3%
Professional	0.6%

The trends used for services not covered by Medicare are the same as the trends developed for use with active benefits. We use the same pharmacy trends for Medicare Secondary plans as we use for active plans.

⁷ The paid trend with the pharmacy contract adjustment is 7.2%.

⁸ <https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/Downloads/FFS-Trends-2016-2018.pdf>

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4.3. Benefit Relativity Factors

Overview

To determine standardized claims rate relationships, also called relativities, BCBSVT has created models that simulate the impact of member benefits for all types of plans. The models determine the allowed charges for the completed 12 months of claims included in the study and “re-adjudicate” the claims, thereby simulating the impact of member cost sharing for a given benefit plan.

Claims data is from BCBSVT’s data warehouse. To ensure accuracy, the claims data used has been reconciled against internal reserving, enrollment and other financial reports. The starting point of the analysis is allowed charges as determined by the BCBSVT claims adjudication system. The claims data includes benefit codes that enable us to identify the services and benefit structures (copays, deductibles, and coinsurance) for each claim.

Incurred allowed charges from July 2016 to June 2017, paid through September 2017, were used in the models. The allowed charges were trended 30 months to the 12-month period that begins January 1, 2019. The majority of the business that will be renewed using these relativity factors has a January 1 renewal date; the rating formula adjusts the trend for non-January renewals (see section 4.4).

The data includes claims from BCBSVT Cost Plus groups, BCBSVT ASO groups, BCBSVT insured large groups, BCBSVT insured small groups, and TVHP insured large groups. Combining these homogeneous populations creates greater consistency and credibility within the relativity factor development. Claims from certain large ASO groups were excluded, as the rich benefits offered by those groups were not in line with the leaner offerings of most insured large groups. CDHP and Non-CDHP claims were combined. We also excluded groups that have special benefits. This predominantly refers to groups that have specific reimbursement with particular providers outside of BCBSVT’s contracts and/or claims processing function. We excluded claims from groups that do not have pharmacy coverage through BCBSVT. We created separate models for active members and Medicare Primary members.

For each benefit plan of interest, the models produce the simulated PMPM values of the benefits. The PMPM for each plan is then divided by the average (trended) paid claims rate from the BRV experience period to produce its benefit relativity (BRV). Relativities are included for medical only plans, Rx only plans, and integrated CDHP plans. In addition, relativities are produced for both active employees and Medicare Primary employees.

Models for Active Employees

Benefit Relativity Model: Medical

The trends used were the total medical trend, by type of service. Cost trends for each type of service were calculated by the discrete unit cost trend method above, while the same utilization trends were used for all types of service (see section 4.2).

Using the contracted reimbursement schedules, we calculated network factors that represent the different network contracts. Using these factors, we can include all claims in each of the

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three networks by adjusting each claim to the basis of a single network. This enables us to combine all the experience for each plan design.

The claims were categorized according to how benefits are paid, and one record was generated for each member, date of service, and type of service. Each record was then assigned a cost share (deductible/coinsurance, copay, covered in full) for each plan available.

The plan designs modeled are:

- Vermont Freedom Plan (VFP)
- Comprehensive (COMP)
- J Plan (JPLAN)
- Vermont Health Partnership (VHP)
- BlueCare Lo Options (LO)
- Open Access (OAP)
- BlueCare (HMO)
- Consumer Driven Health Plan (CDHP)

For all products, claims for preventive mandated benefits were assigned a “covered in full” cost share, independently of the product that is being modeled.

The model tests one benefit design at a time. It determines the member portion of the allowed charges, and from this, a total simulated paid PMPM for each benefit design. The impact of copay, deductible, coinsurance, out-of-pocket maximum, and preventive mandated benefits are all considered. If the average allowed cost of a category is less than the copay being examined, it is assumed that the member paid the full cost of the service.

VFP, VHP, and OAP plans generally have two levels of benefits, in-network and out-of-network. For VFP plans, the in-network benefit levels are applied to providers in the BlueCard[®] network and the out-of-network benefits are applied to non-participating providers. For VHP plans, the in-network benefit levels are generally applied to providers in the BCBSVT Managed Care network and the out-of-network benefits are applied to both providers in the BlueCard[®] network and non-participating providers. For OAP plans the in-network benefit levels are applied to providers in the TVHP Managed Care network and the out-of-network benefits are applied to BlueCard[®] providers. In the administration of both VFP, VHP, and OAP benefits, there generally is no overlap between the in-network and out-of-network deductible and coinsurance.

For LO and HMO plans, benefits are applied only to the TVHP Managed Care network. Services performed at BlueCard[®] providers and other non-participating providers are generally not covered.

For COMP and JPLAN, the same overall benefits are generally applied to the BlueCard[®] and non-BlueCard[®] networks.

We use BRVs in two places in the rating formula described in section 3. The average experience period seasonally adjusted benefit relativity factor (line K in Exhibit 1A) is calculated using BRVs for the benefits in the experience period, while the projected claims for the rating period (line B1 in Exhibit 1B) uses BRVs for the benefits in the rating period.

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The relativities for active employees for some medical products currently in our book of business are displayed on Exhibits 4A and 4B.

Benefit Induced Utilization: Medical

Beginning with this filing, we intend to move toward using factors for the impact of induced utilization (IU) developed by the federal Department of Health and Human Services (HHS) for use with Qualified Health Plans, to which we found the curve of best fit $IU = AV^2 - AV + 1.24$, where AV is the actuarial value of the benefit plan. The HHS IU factors are based on combined medical/pharmacy AV, but as we develop BRVs separately for medical and pharmacy plans, we will apply the formula to medical-only AVs. We normalized the curve such that the average AV underlying the base BRV experience period returns a utilization adjustment of 1.00. In other words, if a simulated benefit has an AV less than the average AV, then utilization will be reduced (i.e. factor < 1.00). If a simulated benefit has an AV greater than the average AV, then the benefit will have induced utilization (i.e. factor > 1.00).

The curve developed from the HHS factors is less steep than the curve we traditionally develop using our own data. For benefits with lower AVs, this results in an increase in the IU factor, while benefits with high AVs see a decrease in the IU factor. We believe using this curve for induced utilization will improve the rating accuracy of all plans. To ease the impact of this switch, we will incorporate it over two years. In this filing, we blend the HHS IU factor with an IU factor developed from our own data. Each factor receives an equal weight.

We performed an independent analysis to measure the correlation between the benefit design and the overall health care spending. The correlation uses the actuarial value as the independent variable and the total allowed charges (capped at \$30,000 per member per year) as the dependent variable. A 2nd order polynomial best fits the data. The polynomial was normalized such that the average actuarial value underlying the base BRV experience returns a utilization adjustment of 1.00. The resulting formula is *Medical Utilization* : $0.6119 \times (AV)^2 - 0.0704 \times (AV) + 0.6619$, with a minimum set at 0.74 and a maximum of 1.20. The BCBSVT IU factor from this curve is blended with the IU factor from the HHS curve to calculate the IU factor used in the BRV model.

Benefit Relativity Model: Pharmacy

The trends used were the total trend, by type of drug, as described above (section 4.2) for Brand, Generic, and Specialty drugs.

Within the model, all pharmacy scripts, including specialty, were assigned to one of six categories: retail generic, retail preferred brand, retail non-preferred brand, mail generic, mail preferred brand, and mail non-preferred brand. We applied flags to identify several categories of drugs that are either required to be covered in full (ACA contraceptives and vaccines) or for which a group may purchase a rider to offer additional coverage (some fertility drugs) or exclusion (lifestyle drugs). We also flagged drugs for which a group may offer special cost-sharing arrangements, such as diabetic medications and wellness drugs. We assigned these flags by National Drug Codes as reported to us by ESI.

The experience period data was adjusted to reflect the major brands that are expected to become generic during 2018 and 2019. The list was based on a report provided by ESI.

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For these brands, in the first six months (the exclusivity period), we reduced the Average Wholesale Price (AWP) by 10 percent and kept the brand discount. For the months after the exclusivity period, we reduced the AWP by 10 percent and changed the discount to the generic discount. The 10 percent reduction in AWP is based upon industry standard assumptions, supported by our own analysis of AWP changes for drugs that have moved from brand to generic over the past several years.

One record was created for each member and date of service combination. One record can have more than one script category. The model tests one benefit design at a time. It determines the member portion of the allowed charges and a total simulated paid PMPM for each benefit design. The impact of the deductible, coinsurance, copays and out-of-pocket maximum (OOPM) is considered. Following the ACA, contraceptives and vaccines are excluded from the cost sharing. If the average allowed cost of a category is less than the copay being examined, it is assumed that the member pays only the full cost of the script. With Vermont Act 171, all pharmacy benefits effective January 1, 2018 or later will have an OOPM of \$1,350. It is possible that this limit will increase effective January 1, 2019, following the IRS rules for Health Savings Account and High Deductible Health Plans. The exhibits include the \$1,350 OOPM on pharmacy benefits.

The relativities for active employees for some pharmacy products currently in our book of business are displayed on Exhibit 4D.

Benefit Induced Utilization: Pharmacy

We performed an independent analysis to measure the correlation between the benefit design and the quantity of pharmacy prescriptions consumed. The pharmacy benefits are adjusted in two ways. First, the generic utilization varies with the benefit design. Claims and membership data from January 2013 through June 2017 were used to create a table to adjust the base generic utilization up or down depending on the difference in the Generic and Brand copays of the member's drug plan.

Second, we performed a separate analysis to adjust for the overall pharmacy benefit. A modeled actuarial value was assigned to every benefit in the experience period. The correlation uses the actuarial value as the independent variable and total allowed charges as the dependent variable. A line best fits the data. The line was normalized such that the actuarial value underlying the base BRV benefit returns a utilization adjustment of 1.00. The resulting formula is *Pharmacy Utilization* : $1.5748 \times (AV) - 0.3663$, with a minimum set at 0.74 and a maximum of 1.24.

Although we use two steps to calculate the induced utilization, we are not adjusting the data twice. The adjustment for difference in generic/brand copays changes the mixture of scripts (i.e. generic dispensing rate) without adjusting the overall frequency of scripts. The richness or leanness of the plan, as measured by the paid to allowed ratio, drives an adjustment to the overall frequency of scripts without changing the mixture of scripts.

Integrated Benefit Relativity Model (CDHP)

The CDHP model combines both the medical and pharmacy models described above. One record was created for each member, date of service and type of service combination. A separate

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medical and pharmacy actuarial value is calculated, and the appropriate utilization adjustment is made.

The relativities for active employees for some CDHP products currently in our book of business are displayed on Exhibit 4C.

Tier Factors

The BRV models calculate the average paid claims of a single member on a particular benefit design. BCBSVT and TVHP sell products with rate tiers for multiple members. These rate tiers feature family deductibles and out-of-pocket maximums either in addition to or in place of the individual limits. We refer to products that have family limits in addition to individual limits as stacked, and to products with only family limits as aggregate. For products renewing after January 1, 2016, members on aggregate plans are subject to the federal maximum allowed individual out-of-pocket, even if the aggregate out-of-pocket maximum is higher. We refer to these plans as hybrid.

To price benefits for rate tiers with multiple members, we calculated tier factors to apply to the BRV for the benefit. We used the BRV models to calculate member paid amounts for each member in the model and used every combination of members to create “families” in the following categories:

- One Adult
- Two Adults
- One Adult and One Child, ... , One Adult and Seven Children
- Two Adults and One Child, ... , Two Adults and Seven Children

For each category of family, we calculated the average plan paid amount subject to the family cost sharing. Then we combined the categories of families into rate tiers using the proportion of each category in the experience period membership as a weight. The ratio of plan paid amount for each rate tier to the plan paid amount for the single rate tier is the tier factor. For aggregate and hybrid factors, we grouped products together into three ranges of out-of-pocket maximums and calculated tier factors for each range. We calculated different factors for products with separate medical and drug benefits and for products with integrated benefits (CDHPs). The hybrid factors are applicable to benefits with a \$7,350 individual out-of-pocket maximum. This is the 2018 individual out-of-pocket maximum set by HHS. Upon release of the 2019 individual out of pocket maximum, we will calculate factors using identical data, assumptions, and methodology and adjust the groupings of out of pocket maximums if necessary. The tier factors calculated for each range and type of benefit are shown in Exhibit 4H.

These factors assume a family multiplier of two for deductibles and out-of-pocket maximums. If a group requests a benefit with a non-standard multiplier, out-of-pocket maximum, tier structure, or individual out-of-pocket maximum (for a hybrid plan) that is not in the exhibit, identical data, assumptions and methodology as described above will be used to calculate appropriate tier factors for the requested benefit.

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Models For Age 65+ Medicare Secondary Plans

Benefit Relativity Model: Medical

Medicare Secondary rate tiers are only available on the BCBSVT Non-Managed Care network. To develop benefit relative values for Medicare Secondary plans, we use the same method as we do for the active factors. For the claims base, we used allowed charges incurred between July 2016 and June 2017, paid through September 2017, for members whose primary insurance is Medicare. Given the scarcity of Medicare Primary members in the BRV experience (fewer than 1,000 member months), we also included Medicare Primary members from groups who were excluded from the development of the active BRVs (large ASO groups).

Medicare Secondary plans cover two categories of services: Medicare-covered services which are subject to member cost share (deductible/coinsurance) and services which are not covered by Medicare. Services subject to Medicare cost sharing were not adjusted for network, as the allowed charges are determined by Medicare, whereas the services not covered by Medicare were adjusted using the contract factors described above to bring all charges to a single network.

The allowed charges were trended to the 12-month period that begins January 1, 2019. The trends used were the total medical trend, by type of service as described in section 4.2.

As with the active benefits, the model simulates the effects of a benefit design on the trended allowed charges and calculates a simulated paid PMPM. This paid PMPM is divided by the Medicare Primary manual rate (without the adjustment for changes to the pharmacy contract) to produce the benefit relative value. Unlike the active benefits, there is no adjustment for induced utilization due to the richness of the benefit. As Medicare is the primary insurance for these plans and Medicare-covered claims make up 97 percent of the trended allowed charges, we do not believe that the richness of the secondary insurance will have any influence on utilization.

The relativities for some Medicare Secondary medical products currently in our book of business are displayed on Exhibit 4E.

Benefit Relativity Model: Pharmacy

To calculate relativities for pharmacy benefits for plans that are secondary to Medicare, we used allowed charges incurred between July 2016 and June 2017, paid through September 2017, for members whose primary insurance is Medicare (including members in large ASO groups, as with the medical experience). The allowed charges were trended to the 12-month period that begins January 1, 2019 using the same trends as used for active members. Pharmacy scripts were assigned to the same categories as for the active members and allowed charges were adjusted for brands going generic between the experience period and the rating period. The benefit designs are modeled to produce a simulated paid PMPM, which is adjusted for mixture and frequency of scripts as described for the active relativities above. The adjusted paid PMPM is then divided by the Medicare Primary manual rate (without the adjustment for changes to the pharmacy contract) to produce the relativity.

The relativities for some Medicare Secondary pharmacy products currently in our book of business are displayed on Exhibit 4G.

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Integrated Benefit Relativity Model (CDHP)

The Medicare Secondary CDHP model combines both the medical and pharmacy Medicare Secondary models described above. One record was created for each member, date of service and type of service combination. A separate medical and pharmacy actuarial value is calculated, and the appropriate utilization adjustment is made.

The relativities for some Medicare Secondary CDHP products currently in our book of business are displayed on Exhibit 4F.

Formulary & Pharmacy Options

BCBSVT and TVHP offer groups a selection of formularies. Groups can either select the BCBSVT Open Formulary or the National Preferred Formulary. Groups electing the National Preferred Formulary receive greater rebates than those on the BCBSVT Open Formulary. To calculate the impact of the change, rebate-eligible claims for the large groups impacted by this filing were identified. Rebate totals were calculated under the contracted terms of each formulary. For groups changing formularies, the below factors are applied to projected rebates. The factors will be adjusted proportionately if the experience period includes a mix of formularies.

Experience Formulary	Rating Formulary	Rebate Multiplier
BCBSVT Open Formulary	National Preferred Formulary	1.277
National Preferred Formulary	BCBSVT Open Formulary	0.783

BCBSVT and TVHP offer groups an Active Choice pharmacy program. This program requires an active choice regarding the way members obtain their maintenance prescription drugs. For groups electing this program, the simulated paid pharmacy claims in the BRV calculation will be decreased by \$0.18 PMPM.

BCBSVT and TVHP offer groups an Express Scripts Specialty Pharmacy Exclusive option. Under this option, members must obtain all specialty medications through the Express Scripts Specialty Pharmacy. Groups electing this option receive greater discounts and rebates on specialty drugs. Pharmacy contract factors for this option are calculated using an analogous method to the standard contract factors, as described in Section 4.2.2. Exhibit 3I Page 2 provides the discount factors for the Express Scripts Specialty Pharmacy Exclusive option. The factors below are applicable to the projected rebates. The factors were developed assuming the entirety of the experience period is on the non-exclusive specialty option and the entirety of the rating period is Express Scripts Specialty Pharmacy Exclusive option. For groups with a mix of specialty options in their experience period, the factors will be adjusted using an analogous methodology proportionately to the programs in effect.

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Formulary	Specialty	Rebate Multiplier
BCBSVT Open Formulary	Express Scripts Specialty Pharmacy Exclusive	1.135
National Preferred Formulary	Express Scripts Specialty Pharmacy Exclusive	1.111

Riders

BCBSVT and TVHP file riders with the Vermont Department of Financial Regulation (DFR) that allow large groups to add or modify covered services. These riders include, but are not limited to, the Benefit Enhancement Rider, Acupuncture Benefits Rider, and Wellness Drug Rider. For riders that modify cost sharing on services that are already covered, the benefit relativity model is used to price the rider. For riders that cover a non-covered service, allowed charges are developed from groups who offer that coverage and adjusted to the group's benefit, or a reasonable approximation of allowed charges is used if no experience data exists. If, in the underwriter's professional judgment, the election of a rider will create material anti-selection, the underwriter will modify the rate as necessary using underwriting judgment, as described in section 3.

4.4. Manual Rate

The manual rate for active members is the paid claims PMPM incurred between October 1, 2016 and September 30, 2017 and paid through November 30, 2017 from the groups impacted by this filing, trended to calendar year 2019 using the trends and pharmacy contracts adjustments described in section 4.2. One group with predominantly out-of-state membership, particularly high experience claims, and an atypical structure was excluded from the manual rate calculation as we do not believe it is representative of an average large group. Claims were capped at \$280,000⁹ and expected claims between \$280,000 and \$800,000 (the expected corporate reinsurance attachment point) were added. The expected claims were calculated using the method described in section 4.1.

A separate manual rate for Medicare Primary members was calculated using the paid claims PMPM from the BRV experience period, trended to calendar year 2019 using the Medicare Primary trends and the pharmacy contract adjustments described in section 4.2. No adjustments were made for large claims.

⁹ Selected such that $P = 95\%$ and $k = 0.05$ with projected Large Group member months, using same data underlying the development of credibility formula.

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Calculation of the Manual Rate (Actives)

Experience Paid Claims, capped at \$280,000 and completed	A	\$ 62,669,575
Expected Claims between \$280,000 and \$800,000	B	\$1,934,809
Overall Paid Trend factor (7.6% for 27 months)	C ₁	1.179
Pharmacy Contract Adjustment	C ₂	0.990
Projected Total Paid Claims	$D = (A + B) \times C_1 \times C_2$	\$ 75,424,720
Total Member Months	E	155,213
Manual Rate	F = D / E	\$ 485.94

Calculation of the Manual Rate (Medicare Primary)

BRV Experience Paid Claims	A	\$ 25,592,398
Overall Paid Trend factor (5.6% for 30 months)	B ₁	1.146
Pharmacy Contract Adjustment ¹⁰	B ₂	0.974
Projected Total Paid Claims	$C = A \times B_1 \times B_2$	\$ 28,546,087
Total Member Months	D	87,234
Manual Rate	E = C / D	\$ 327.44

As noted in section 4.3 above, we use a version of the Medicare Primary manual rate without the pharmacy contract adjustment as the denominator of the relativity calculation. Per the above calculation, this value is \$336.24. We multiply the benefit relativity by the manual rate to calculate projected manual claims. If both the denominator of the relativity and the manual rate included the pharmacy contract adjustment, they would cancel in the multiplication and the projected claims would not reflect the discounts in the new pharmacy contract.

The method of calculating the manual rate is different for active and Medicare Primary members. The active manual rate was developed from the experience of active members in the large groups covered by this filing. There are not enough Medicare Primary members in large groups to develop a credible manual rate with only large group experience, so we based the Medicare Primary manual rate on the larger set of claims in the BRV experience, which includes Medicare Primary members from ASO groups as well as large groups.

The manual rate is adjusted to reflect a group's particular characteristics, as demonstrated in Exhibit 5A. An adjustment is made for the average age/gender factor (line B) of the group. For active members, we used factors from the 2014 Milliman Health Cost Guidelines. For Medicare Primary members, we used factors from the SOA's report *Health Care Costs - From Birth to*

¹⁰ This adjustment is applied proportionately based on Medicare Primary membership with pharmacy coverage

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*Death*¹¹. In each case, the factors were normalized such that the membership in the manual rate experience period has an age/gender factor of one. The case's industry factor (line C) is determined based on the Standard Industrial Classification code. See Exhibit 5B for the schedule of industry factors. These have also been normalized such that the manual rate has a factor of one. We do not apply an industry adjustment to the manual rate for Medicare Primary members.

For groups with a projection period other than calendar year 2019, the manual rate will be adjusted for trend to reflect the group's projection period (line D) and the additional impact of pharmacy contract changes (line E). Finally, a contract conversion factor (line F) is calculated based on member distribution and tier factors in order to convert from a PMPM to a single rate basis (necessary because the adjusted manual rate (line Q of Exhibit 1A) is blended with the projected single contract rate (line P of Exhibit 1A), which is not on a PMPM basis).

A main driver of the average rate increase is the change in manual rate method. Previously, the claims in the benefit relativity model were normalized to the manual rate. Setting the denominator of the benefit relativity factor equal to the manual rate effectively cancelled the impact of its development from average insured large group experience, and instead led manual claims to be developed from the experience underlying the benefit relativity model. The difference between manual and experience claims on renewals used to develop the average rate increase on this and prior filings is illustrative of the resolved disconnect in the development of the manual rate:

Effective Date	Ratio of Experience to Manual Claims
1/1/2017	1.10
1/1/2018	1.12
1/1/2019	1.01

4.5. Administrative Charges

The sources of actual expense data in this filing are BCBSVT's data warehouse and accounting records. The experience period for this filing is October 2016 to September 2017. Actual BCBSVT and TVHP administrative expenses for the experience period are compiled on a GAAP reporting basis. During 2015, BCBSVT completed a comprehensive cost accounting study. The results were refreshed during 2017 to reflect known operational changes. Allocations to specific lines of business on a GAAP reporting basis were updated for the results of this study, beginning in December 2015. Exhibit 6A provides a reconciliation of the experience period to restated GAAP financial report data.

Experience Base of Actual Expenses

Administrative expenses are allocated under BCBSVT's cost accounting system to lines of business. Overhead expenses are allocated to lines of business on the basis of relative capital requirements, which were measured as each line's relative impact on Risk-Based Capital (RBC).

¹¹ <https://www.soa.org/Research/Research-Projects/Health/research-health-care-birth-death.aspx>
The factors for the age curve are in Chart 21 of the databook linked on the page.

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We used BCBSVT insured large group and TVHP insured large group information for the base administrative charges.

The cost accounting data by cost center is allocated into cost categories for purposes of determining administrative charges for each specific group account, given that account's characteristics.¹² The group cost categories align with the rules used in the cost allocation model. The group cost categories include:

Account - those expenses that are allocated to specific group accounts on a per group account basis.

Member - those expenses that are allocated on a per member basis.

Contract - those expenses that are allocated on a per contract (subscriber) basis.

Medical Claims - those expenses that are allocated on a per medical claim basis.

Total Projected Claims - those expenses that are allocated via a percent of claims factor.

For each of the group cost categories described above, the respective number of unit months during the experience period was tabulated for BCBSVT and TVHP insured large groups. These segments are combined in this filing for marketing considerations. The unit months include the number of account months, number of member months, number of contract months, and number of medical claims by months. For the expenses allocated on a capital requirement basis, the experience administrative charges were divided by total paid claims to calculate a percent of claims factor.

Reclassifications reflected in Exhibit 6A include the removal of federal fees (these are added to premium rates separately; see section 4.10), GMCB billback (these are added to premium rates separately; see section 4.11) and fees paid to our vendor Health Equity for the administration of Health Savings Accounts and Health Reimbursement Accounts linked to our insurance products (participation in this service is optional and we assign these fees to groups who select the service). We also removed any expenses incurred due to one-time, non-recurring events, as these fees are not expected to continue to occur in the projection period.

Using the adjusted experience period administrative expenses and unit months, per unit per month (PUPM) values were calculated. For the group segments included in this filing, there are four such PUPM values and one percent of claims value - one for each of the cost categories indicated above.

The experience period administrative expenses PUPM are shown in Exhibit 6B, line C.

Projection Factors

Actual administrative costs PUPM from the experience period were projected to each of the rating periods. Projection factors are based on a 2.5 percent annual trend. These projection factors are intended to make reasonable but modest provision for increases in overall operating costs PUPM. Note that there are no known extraordinary or mandate-related costs at this time which require separate provision for the rating periods involved in this filing.

¹² PUPM costs for Cost Plus members having Medicare Supplement plans are set equal to the corresponding values for conventionally funded Medicare Supplement members. The resulting costs are removed from the Cost Plus cost accounting charges before dividing by the (non-Medicare Supplement) Cost Plus units.

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We are assuming that personnel costs (wages and benefits) will increase by three percent, the budgeted wage increase for 2018, over the projection period. Other operating costs are assumed to remain flat. Based on year-to-date September 2017 information, we have calculated that 84.6 percent of our administrative costs are for salaries and benefits. We are therefore increasing our projected administrative expenses by the weighted average of 2.5 percent per annum.

		YTD Sep 2017	Percent of Total
Employee costs	A	32,997,257	59.2%
Purchased service	B	16,792,592	30.1%
Other operating costs	C	5,988,790	10.7%
Subtotal administrative expenses	D = A+B+C	55,778,639	100.0%
Total Personnel Cost	E = A / (A + C)		84.6%
Trend for Personnel Cost	F		3.0%
Total Trend	G = $\{(1+F) \times E + (1.00) \times (1-E)\} - 1$		2.5%

An examination of historical PMPM administrative charges shows a decreasing trend in recent years, driven primarily by membership increases. For 2019, we project total BCBSVT membership will decrease. We calculated PMPM admin charges with experience period enrollment and projected 2019 enrollment and found they increased by 0.6 percent with the projected 2019 enrollment. We assumed that variable costs represent half of the increase, and therefore applied an increase of 0.3 percent to the base PUPM charges to account for the reduction in membership.

Charges for Group Accounts

The administrative charge PUPM figures shown in Exhibit 6B are the values to be applied on an account by account basis, along with each group account's corresponding unit count, to produce account-specific administrative charges. These amounts will then be expressed as equivalent PMPM amounts for each group account.

Amounts for special items or unique services not part of BCBSVT or TVHP's standard scope of administrative services (e.g., special booklets, certificates, or reports) are to be determined and applied separately on an account-specific basis. Commissions based on the commission scale applicable to the account are not reflected in the schedule of admin charges in Exhibit 6B and will be calculated and applied separately.

Reasons for Increase

As noted in section 2, administrative charges for the 63 large groups in the renewal comparison are increasing by \$5.95 PMPM, a 16.6 percent increase. Below is a table showing the reasons for this increase:

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		Admin Charges PMPM	Change PMPM	Percent Change
1	Approved January 2018 Admin from Q3 2017 Filing	\$35.88		
2	Correct Trend Application	\$36.73	\$0.85	2.4%
3	Update Experience	\$39.13	\$2.40	6.7%
4	Update Trend	\$39.16	\$0.03	0.1%
5	Trend to January 2019	\$39.83	\$0.67	1.9%
6	Update Membership Adjustment	\$40.01	\$0.18	0.5%
7	Expected Allocation Change	\$41.82	\$1.81	5.1%

In the actuarial review process for the Q3 2017 filing, we discovered that the trend factor was not being applied correctly and that the projected administrative charges PUPM were understated as a result. We did not update that filing to correct the error, but we have corrected it in this filing. Step 2, Correct Trend Application, refers to the impact of this correction.

Step 7, Expected Allocation Change, refers to the projected increase to paid claims in 2019 compared to 2018. As noted above, this component reflects the necessary capital requirements. As large group claims, and therefore premium increase, a greater portion of capital requirements will be allocated to this line of business, which is the reason for the 5.1% increase in this component.

4.6. Net Cost of Reinsurance

BCBSVT and TVHP have purchased reinsurance for claims in excess of \$800,000 for 2018, and expect to purchase similar reinsurance in future years with limits approximately equal to the 2018 limit increased by trend. We estimate that the target loss ratio for the reinsurance is approximately 75 percent, which implies a cost of reinsurance of approximately 33 percent of claims above the reinsurance limit. For each pricing period starting quarter, we determined an annual cost of reinsurance for the trended reinsurance limit by multiplying the expected annual claims cost above the limit by 33 percent. Dividing this by 12 produces the PMPM cost of reinsurance. The table of these PMPM's, based on pricing period starting quarter, is shown in the table below. If a factor is required for a pricing period not in the table, identical data, assumptions, and methodology as described above will be used to calculate the net cost of reinsurance.

Pricing Period Starting Quarter					
Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019
\$1.32	\$1.33	\$1.34	\$1.36	\$1.38	\$1.40

4.7. Pharmacy Rebates

Pharmacy rebates are calculated by taking the experience period rebates and trending them using the Brand Cost trend (from Exhibit 3E). Pharmacy rebates are paid with an average six-month delay from the time of the original claims. For months in the experience for which we do

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not have detailed rebate information, an estimated rebate amount is included in the calculation.

4.8. Contribution to Reserve

The administrative charges developed are for administrative expenses only and contain no provision for reserve contribution. Contribution to reserves (CTR) supports the overall financial health of the company for the benefit of all members. CTR is required in order to maintain an adequate level of members' surplus. Surplus is a critical consumer protection that allows members to receive needed care and providers to continue to receive payments in the event of unforeseen adverse events that may otherwise impact BCBSVT and TVHP's ability to pay claims. BCBSVT and TVHP must remain financially strong in order to continue to provide Vermonters with outstanding member experiences, responsible cost management and access to high value care. BCBSVT and TVHP also believe that CTR should be managed to an adequate long-term level, rather than fluctuating significantly from year to year. The Tax Cuts and Jobs Bill of 2017 repealed the Corporate Alternative Minimum Tax (AMT). As a result, BCBSVT and TVHP expect that their federal tax liability will be zero in 2018 and beyond. We have accordingly reduced our long-term CTR requirement from 2.0 percent to 1.5 percent to reflect the absence of federal income tax. We believe CTR of 1.5 percent for insured groups and 0.375 percent for Cost Plus groups represents an adequate long-term, yet not excessive, CTR. While this may fall above or below that required to maintain RBC in this or any given future year, consistently maintaining an adequate long-term assumption will allow us to avoid rate shocks in years of high growth in membership or high increases in health care cost trend. Using these long-term assumptions maintains consistency across product lines, which promotes fairness to ratepayers.

Line of Business	Contribution to Reserve
BCBSVT & TVHP Insured Groups	1.5% of premium
BCBSVT Cost Plus Groups	0.375% of equivalent premium

4.9. State Mandates and Assessments

Vermont Vaccine Purchasing Program Payments

The Vermont Vaccine Purchasing Program¹³ offers health care providers state-supplied vaccines at no charge by collecting payments from Health plans, insurers, and other payers. The program's assessment is a PMPM for each Vermont resident. The approved assessment for 2018 is \$0.72 for Adults and \$8.15 for Children. We will use these rates until new rates are approved.

New Hampshire Purchasing Program Payments

The New Hampshire Purchasing Program¹⁴ offers health care providers state-supplied vaccines at no charge by collecting payments from Health plans, insurers, and other payers. The assessment for 2018 is \$6.70 for each child that is a New Hampshire resident. The current best estimate of the 2019 rate is \$10.45 per assessable life per month. We will use these rates until a new rate is approved.

¹³ <http://www.vtvaccine.org/>

¹⁴ <http://www.nhvaccine.org/nhvaccine.nsf/pages/home.html>

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New York Graduate Medical Education (GME) Program

BCBSVT and TVHP pay the New York GME Covered Lives Assessment¹⁵ for all members who are New York residents. The assessment varies based on the county of residence. We will use the approved 2018 rates until new rates are approved.

Health Care Claims Tax

The Health Care Claims Tax of 0.999 percent applies to all claims or capitations incurred by members with Vermont zip codes. We use the percentage of current members with Vermont zip codes to estimate the percentage of rating period claims expected to be incurred by Vermont members. Act 73 of 2013 sunset the 0.199% assessment for the Health IT-Fund. On March 1, 2017, the Vermont Legislative Joint Fiscal Office issued a summary¹⁶ that included proposal from the Governor to extend the sunset to July 1, 2018. Given this fee has been extended close to its sunset date in the past, we will include it in the calculation and update the charge if new information becomes available.

Blueprint

BCBSVT and TVHP participate in the Vermont Blueprint for Health program. The current assessments for this program, applied to members who are attributed to a Blueprint provider as of the month the renewal is produced, are \$2.77 PMPM for the Community Health Team and \$3.00 PMPM for the Patient Centered Medical Homes (PCMH). PCMH are eligible for up to \$0.50 for performance. We project that our total PMPM for PCMH will be \$3.23. The projected performance payment is based on the average payment for large groups in the experience period used to develop the average rate increase. Any updates made to the Blueprint Manual¹⁷ will be incorporated in renewals.

Other Assessments

Other state mandates and assessments will be included in the calculation as applicable.

4.10. Federal Assessments

Patient-Centered Outcomes Research Institute Fee:

This fee is part of the Affordable Care Act and applies to all plan years ended after September 30, 2012 and before October 1, 2019. We estimate the fee to be \$2.53 annually and therefore, we will include a \$0.21 PMPM charge in the rate calculation for groups with applicable plan years. This estimate will be updated if additional information is received.

Federal Insurer Fee

The Federal Insurer Fee is intended to help pay for some provisions in the Affordable Care Act. This fee is only applicable to Fully Insured & Refund Eligible Groups. H.R.195 temporarily suspended this fee for 2019 only. For 2018 we project the fee to be 2.1% of premium, and for 2020 we project the fee to be 2.2% of premium. The fee will be weighted proportionate to the applicable fee by months in the rating period.

¹⁵ https://www.health.ny.gov/regulations/hcra/gme/2018_surcharges_and_assessments.htm

¹⁶ [https://legislature.vermont.gov/assets/Documents/2018/WorkGroups/House Energy and Technology/Information Technology/W-Nolan Langweil-HIT Fund-3-1-2017.pdf](https://legislature.vermont.gov/assets/Documents/2018/WorkGroups/House_Energy_and_Technology/Information_Technology/W-Nolan_Langweil-HIT_Fund-3-1-2017.pdf)

¹⁷ <http://blueprintforhealth.vermont.gov/>

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The IRS Annual Fee on Health Insurance Providers for 2016 Invoice, dated August 24, 2016, calculated the BCBSVT portion of the total assessment as:

$$\frac{\text{Net premiums taken into account for BCBSVT}}{\text{Net premiums taken into account for all covered entities}} = \frac{\$536,434,161.00}{\$632,428,972,565.09} = 0.085\%$$

Please see below for the estimate of the 2018, 2019, and 2020 fee, which will be updated if additional information is received.

		2018	2019	2020
Projected Fully Insured Premium subject to the Federal Insurer Fee	a	\$583,842,000	\$620,538,000	\$656,053,000
Total Industry Assessment for Federal Insurer Fee	b	\$14,300,000,000	\$0	\$17,018,000,000
BCBSVT and TVHP Portion of Total Assessment (based on 2016 information)	c	0.085%	N/A	0.085%
Projected BCBSVT and TVHP Federal Insurer Fee	d = b x c	\$12,130,000	\$0	\$14,435,000
Estimated Required Charge as a percent of Total Premium	e = d / a	2.1%	0.0%	2.2%

Other Assessments

Other federal mandates and assessments will be included in the calculation as applicable.

4.11. Green Mountain Care Board Billback

BCBSVT and TVHP received the estimated 2018 PMPM reflecting both the increase in GMCB's billback amounts and the proposed new allocation method. We include the GMCB's estimate of \$2.71 PMPM for BCBSVT and TVHP in this filing. This charge will be updated if additional information is received.

BCBSVT Projected Large Group Billback	\$335,406
TVHP Projected Large Group Billback	\$127,285
Total Large Group Billback	\$462,691
Projected Member Months	170,592
Billback Charge PMPM	\$2.71

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5. Factors applicable only to specific Products

5.1. Stop Loss Coverage for Cost Plus products

Cost Plus groups are at risk for the claims incurred by their members. To protect themselves from high claims, they must purchase both Individual Stop Loss (ISL) and Aggregate Stop Loss (ASL) from BCBSVT¹⁸.

5.1.1. Individual Stop Loss

ISL charges are developed using the same formula and factors as described in section 4.1. The charges are developed for the rating period, rather than the experience period. They include a load for a 70 percent loss ratio (to include the cost of reinsurance). Stacked tier factors are used to spread the charges across the different contract tiers, even when the benefit itself is aggregate, as the accumulation of the family cost sharing for the benefit does not have a meaningful impact on claims above the ISL attachment point.

5.1.2. Aggregate Stop Loss

Distribution of Individual Claims by Amount

The distribution of individual claims by amount was stochastically modeled using the membership and claims used to develop medical and pharmacy trend, as described in section 4.2 (including BCBSVT Cost Plus groups, BCBSVT ASO groups, BCBSVT insured large groups, BCBSVT insured small groups and TVHP insured groups). For each number of members (N) 25, 50, 100, 150, 200 to 1000 (by increments of 100), 1,500, 2,000 to 5,000 (by increments of 1,000) and 10,000 to 20,000, 10,000 simulations are run. Each simulation assigns a random number to every member and selects the (N) lowest members. For each specific stop loss level, the expected claims amount and standard deviation of the distribution of claims less than the specific stop loss level are calculated.

Expected Claims Factors

For each number of members (N) noted above and for each ISL limit, a preliminary expected fraction of aggregate claims in excess of 110%, 115%, 120%, 125% and 130% of expected aggregate claims was calculated. These were then adjusted for uncertainty in the projection of expected claims as described in the table below:

Expected to projected expected	>107.5%	107.5% -	102.5% -	97.5% -	< 92.5%
Fraction of projections	F ₁ *	F ₂ *	F ₃ *	F ₄ *	F ₅ *

* Estimated for distribution

¹⁸ With the exception that with the approval of BCBSVT's Executive staff, Cost Plus groups can shop their stop loss in accordance with strict guidelines set forth by BCBSVT.

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The factors developed above were then divided by 0.7 to produce an expected loss ratio (net of the provision for default) of 70 percent.

To protect BCBSVT against potential default situations (i.e. to cover the risk of the group failing to fund claims), the proposed ASL rates include an additional fixed risk charge of 0.5 percent of expected claims under the ISL limit for groups with fewer than 20,000 members, and a reduced fixed risk charge of 0.4 percent of expected claims under the ISL limit for groups of 20,000 members or more.

The final factors are applicable to total expected claims under ISL.

To assure that the factors on each line are strictly decreasing with increasing stop loss percentage, in cases where the ratio for a 130% stop loss percentage was less than 0.0001:

- the calculated value for 130% was increased by 0.00001
- the calculated value for 125% was increased by 0.00002
- the calculated value for 120% was increased by 0.00003
- the calculated value for 115% was increased by 0.00004
- the calculated value for 110% was increased by 0.00005.

The tables of factors are contained in Exhibit 7A.

If the expected number of members (N) in the rating period is not one of the values in either table, the value is determined by interpolating linearly between the entries in the table for the numbers of members immediately below and above N.

If a group requests an ISL limit or aggregate attachment point that is not in the exhibit or if there are more than 20,000 members, identical data, assumptions, and methodology as described above will be used to calculate the appropriate Aggregate Stop Loss Rating Factor for the required attachment point.

5.2. Risk and Administrative Charges for Experience Refund Eligible products

Risk Charges for Experience Refund Eligible Plans

The BCBSVT and TVHP Experience Refund Eligible products involve pricing margins of 10% or 5% (i.e. expected claims below the pooling limit will be increased by 10% or 5% in the determination of the premium). The risk charge factors are developed in the same way as the ASL factors described in the previous section, except that the loadings for the 70 percent expected loss ratio and for default (the charges of either 0.5 percent or 0.4 percent of expected claims) do not apply. These factors are applied to total expected claims under pooling (before adjustment for pricing margin) and the retention is increased by the risk charge (both in the prospective pricing and in the refund calculation).

The tables of factors are contained in Exhibit 8A.

If the expected number of members (N) in the rating period is not one of the values in either table, the value is determined by interpolating linearly between the entries in the table for the numbers of members immediately below and above N.

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If a group requests a pooling limit that is not in the exhibit or there are more than 20,000 members, identical data, assumptions, and methodology as described above will be used to calculate the appropriate risk charge for the required attachment point.

Settlement Administration Charge

A settlement administration charge, offset by an investment income credit, will be added to the group's administrative charges (described in section 4.5).

1. Settlement Administration Charge: An additional administrative charge of \$1,780 will be included to offset the costs of administering the retrospective arrangement. This amount is based on the 2018 settlement administration charge of \$1,740 increased by 2.5 percent trend to reflect the assumed increase for the direct staff cost.
2. Investment Income Adjustment: A credit of 0.2 percent of the margin at 5% and 0.4 percent of the margin at 10% will be applied to the settlement administrative charge to reflect investment income earned on the margin.

6. Historical Financial Results

Below is the combined medical and pharmacy experience for the prior five calendar years. This includes BCBSVT and TVHP insured large group experience. Additionally, loss & expense ratios are provided for Cost Plus groups.

Insured Large Group Experience

Year	Incurred Claims	Administrative Charges	Earned Premium	Gain/(Loss)	Loss & Expense Ratio	Number of Groups	Member Months
2013	\$202,533,563	\$16,746,108	\$216,651,641	(\$2,628,030)	101.2%	210	531,690
2014	\$131,255,716	\$16,985,281	\$148,268,779	\$27,782	100.0%	204	361,386
2015	\$139,232,792	\$19,861,232	\$153,535,019	(\$5,559,005)	103.6%	194	352,678
2016	\$86,034,897	\$12,804,526	\$95,541,735	(\$3,297,687)	103.5%	120	218,650
2017	\$86,520,109	\$10,424,245	\$92,106,277	(\$4,838,077)	105.3%	79	197,954

Cost Plus Experience

Year	Loss & Expense Ratio	Number of Groups	Member Months
2013	92.9%	9	778,985
2014	94.7%	8	678,796
2015	94.4%	6	647,247
2016	95.0%	4	515,583
2017	95.4%	4	514,809

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The incurred claims, administrative expenses, and earned premium are from BCBSVT's GAAP financials. The claims include capitations, fee-for-services claims, certain assessments, and other claims expenses.

The chart below shows the expected and actual contribution to reserves from the previous five years for Insured Large Groups. The expected contribution to reserves is based on our forecasting model, which incorporates final premiums including amendments ordered by regulators.

Year	Expected	Actual
2013	0.6%	-1.2%
2014	-2.4%	0.0%
2015	-2.2%	-3.6%
2016	-1.6%	-3.5%
2017	-1.4%	-5.3%

We use the factors and formula in this filing to project a Medical Loss Ratio (MLR) for 2019. Using the manual rate as a proxy for projected claims, we project a 2019 MLR of 89.9 percent for BCBSVT and 89.0 percent for TVHP. The BCBSVT credibility-adjusted MLR for Large Group was 96.8 percent in 2015 and 96.8 percent in 2016. The TVHP credibility-adjusted MLR for Large group was 97.7 percent in 2015 and 98.4 percent in 2016

BCBSVT MLR

(A)	Manual Rate	\$485.94	Exhibit 5A
(B)	Rebates	\$13.96	2016 MLR Filing, untrended
(C)	Estimated HCQ	\$3.08	2016 MLR Filing, untrended
(D)	State Mandates and Assessments	\$8.62	Calculation as described on Exhibit 1B, using latest actual PMPM as needed
(E)	MLR Numerator	\$483.68	= (A) - (B) + (C) + (D)
(F)	Projected Claims	\$480.60	= (A) - (B) + (D)
(G)	Net Cost of Reinsurance	\$1.36	Actuarial Memorandum, Section 4.6
(H)	PCORI	\$0.00	Actuarial Memorandum, Section 4.10
(I)	Administrative Charge	\$40.68	Calculation as of January 2019, from Exhibit 6B
(J)	GMCB Billback	\$2.71	Calculation using 2018 Charges
(K)	Subtotal	\$525.35	= (F) + (G) + (H) + (I) + (J)
(L)	Total Premium	\$538.22	= (K) / (1-0.009-0.015)
(M)	Federal Insurer Fee	\$0.00	= (L) x 0.0% (from Actuarial Memorandum, Section 4.10)
(N)	Commissions	\$4.80	= (L) x 0.9% (from 2016 MLR filing)
(O)	Contribution to Reserve	\$8.07	= (L) x 1.5% (from Actuarial Memorandum, Section 4.8)
(P)	MLR Denominator	\$538.22	= (L) - (H) - (M)
(Q)	MLR	89.9%	= (E) / (P)

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TVHP MLR

(A)	Manual Rate	\$485.94	Exhibit 5A
(B)	Rebates	\$11.02	2016 MLR Filing, untrended
(C)	Estimated HCQ	\$4.47	2016 MLR Filing, untrended
(D)	State Mandates and Assessments	\$8.62	Calculation as described on Exhibit 1B, using latest actual PMPM as needed
(E)	MLR Numerator	\$488.01	= (A) - (B) + (C) + (D)
(F)	Projected Claims	\$483.55	= (A) - (B) + (D)
(G)	Net Cost of Reinsurance	\$1.36	Actuarial Memorandum, Section 4.6
(H)	PCORI	\$0.00	Actuarial Memorandum, Section 4.10
(I)	Administrative Charge	\$40.68	Calculation as of January 2019, from Exhibit 6B
(J)	GMCB Billback	\$2.71	Calculation using 2018 Charges
(K)	Subtotal	\$528.30	= (F) + (G) + (H) + (I) + (J)
(L)	Total Premium	\$548.38	= (K) / (1-0.022-0.015)
(M)	Federal Insurer Fee	\$0.00	= (L) x 0.0% (from Actuarial Memorandum, Section 4.10)
(N)	Commissions	\$11.85	= (L) x 2.2% (from 2016 MLR filing)
(O)	Contribution to Reserve	\$8.23	= (L) x 1.5% (from Actuarial Memorandum, Section 4.8)
(P)	MLR Denominator	\$548.38	= (L) - (H) - (M)
(Q)	MLR	89.0%	= (E) / (P)

The above calculations represents an estimate assuming that all pricing assumptions hold true, and assuming no change from 2016 values for various quantities (e.g. rebates, commissions).

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7. Actuarial Opinion

The purpose of this filing is to establish the formula, manual rate and accompanying factors that will be used for renewals of Blue Cross and Blue Shield of Vermont and The Vermont Health Plan large group plans. This filing is not intended to be used for other purposes.

The data used in this analysis has been reviewed for reasonableness and consistency; however, it has not been audited.

It is my opinion that the rating formula and factors presented in this filing are reasonable, and have been prepared in accordance with applicable Actuarial Standards of Practice. The formula and factors will produce premium rates that are reasonable in relation to the benefits provided, and will not be excessive, deficient or unfairly discriminatory.

I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries, and I meet the Academy's Qualification Standards to render this opinion.



Paul A Schultz, F.S.A., M.A.A.A.

March 15, 2018